



CONTINGENCY OPERATIONS

BASE CAMP FACILITIES STANDARDS



This book effective 25 MAR 2002



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY, EUROPE, AND SEVENTH ARMY
THE DEPUTY COMMANDING GENERAL
UNIT 29351
APO AE 09014


AEAEN-EOPS-MET

MAR 25 2002

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: United States Army, Europe (USAREUR) Base Camp Facility Standards

1. This handbook is the USAREUR standard for all units and organizations occupying base camp facilities in contingency operations. The intent is to provide personnel with adequate living and working facilities, while being good stewards of taxpayer dollars.
2. This Red Book outlines master planning, housing, unit facilities, utilities, service member support, and facility maintenance standards for all bases. It is essential that commanders at all levels ensure these quality of life standards are met, but not exceeded.
3. Commanders are responsible for ensuring that all facilities comply with the requirements outlined in the handbook. Exceptions to the Red Book should be routed through the USAREUR Office of the Deputy Chief of Staff, Engineer, to the undersigned for decision.


MICHAEL L. DODSON
Lieutenant General, USA
Deputy Commanding General

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BASE CAMP FACILITY STANDARDS

Contingency Operations

1. GENERAL. These standards apply to Base Camp Facilities for all US forces operating in designated USAREUR contingency areas, consistent with the designation of HQs, USAREUR as having Title X responsibility for the combatant commander in the EUCOM AOR.

**USAREUR Title 10
Support = ADCON**

ADCON (JP 1-02): direction or exercise of authority over subordinate or other organizations in respect to administration and support, including organization of service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations.

BOTTOM LINE

Administrative and support responsibilities identified in Title X, US Code, are synonymous with the Administrative Control authority (ADCON) outlined in joint doctrine.

a. The Red Book has been developed consistent with the guidance provided in Joint Publication 4-04 [Joint Doctrine for Civil Engineer Support] for defining contingency construction as:

TEMPORARY. Designed and constructed on an expedient basis, with finishes, materials, and systems selected with energy efficiency, maintenance, and lifecycle costs being secondary considerations and with a life expectancy of five years or less.

SEMI – PERMANENT. Designed and constructed with finishes, materials, and systems selected for moderate energy efficiency, maintenance, and life cycle cost and with a life expectancy of more than five but less than 25 years.

PERMANENT. Designed and constructed with finishes, materials, and systems selected for energy efficiency, low maintenance, and low life cycle cost and with a life expectancy of 25 years or more.

Facilities governed by this publication will be either temporary or semi-permanent, unless permanent construction is specifically approved by USAREUR.

b. Base camps are categorized as: major base camps, forward operating bases, or outposts. Major base camps, occupied by a battalion task force or larger unit, (500 population or more) are continuously operated camps with command, staff, and logistic functions. Forward operating bases are normally occupied by company-sized units and operated on a continuous basis. Outposts are normally used for short term, operationally defined missions (examples checkpoints and observation posts), platoon or squad sized, and will have limited services.

c. Infrastructure and facilities are intended to provide a quality, safe, and affordable working and living environment for the soldiers and civilians involved in the operation.

d. The facility concept of operation has three components.

(1) *Master Planning.* Master planning provides an integrated long-term strategy for construction and maintenance of facilities. The intent is to provide needed facilities at the best possible cost. The Base Camp Planning Board (BCPB) develops and maintains the master plan and conducts long-range, short-range and capital investment planning. Master planning produces the requirements USAREUR validates and resources.

(2) *Facilities Standards Development.* Army regulation governing military installations may not entirely apply to contingency operations. This handbook takes the intent of those regulations and applies them to contingency operations. This handbook describes the standards for housing, unit facilities, soldier support facilities and utilities. Supported unit commanders or activity heads will not deviate from these standards without the written approval of the DCG, USAREUR. Requests to deviate from Red Book standards or to establish a new standard will be submitted to the USAREUR DCSSENGR. DCSSENGR is responsible for staffing the request and submitting it to the DCG for decision. This process is intended to ensure effective use of resources and equitable standards for all personnel serving throughout the Area of Operation (AO).

(3) *Resource Management.* Resource managers will track base camp projects approved IAW master plans separately from repair and maintenance projects. Construction projects contained in the approved master plan will be prioritized and implemented in the order of prioritization. New construction will be tracked using a system reporting the start of construction, a weekly percent of progress, and final date for completion of construction.

(a) Requests exceeding \$50,000 require USAREUR approval.

(b) All requirements that exceed Red Book standards, regardless of the cost, must be forwarded to USAREUR for approval. The USAREUR Green Book covers this process in detail.

(c) Facilities supporting NATO Operations / Contingents. When mission or support requirements exist for facilities on base camps supporting NATO units, activities, or personnel contingents, the U.S. may fund to a level as

given otherwise herein based on the U.S. population. The local NATO contingency headquarters may wish to seek NATO (conjunctive) funding for any facility requirements which exceed U.S. standards. ODCSENGR NATO Branch will support coordination of mutually beneficial facility requirements with all required NATO (higher) agencies upon request.

e. Wherever possible, specialized technical requirements for the missions of other services and nations will be accommodated through the existing JARB process. In these instances, the proponent activity or service will specify the particular technical requirements to be addressed as part of the JARB presentation of the proposed project. *For example, United States Air Force, Europe (USAFE) are the service proponent for technical specifications dealing with safety-of-flight issue at planned/existing airfields.*

2. MASTER PLANNING.

a. *Purpose.* Master planning is a comprehensive process bringing together a variety of players and their requirements. It addresses the need to comprehensively plan facilities for the future to satisfy various and competing interests in support of the mission. Balkans ASGs establish Base Camp Planning Boards (BCPB) at each of the base camps, provides guidance on conducting planning boards, addresses commander's guidance, and describes the Master Planning Components.

b. *Definition.* A Master Plan is the ASG Commander's comprehensive plan for the orderly and efficient management and development of land, facilities and infrastructure in support of the mission.

c. *Base camp applicability.* All main base camps will have a BCPB and will develop a Base Camp Master Plan (BCMP). Forward operating bases and outposts fall under the command structure of the main operations base of their headquarters.

d. *References.*

- (1) AR 210-20 Master Planning for Army Installations.
- (2) Architectural and Engineering Instructions (AEI), Design Criteria, 15 Jul 94.
- (3) USAREUR Space and Planning Criteria Manual.
- (4) Master Planning Instructions (MPI), 9 July 1993.

e. *Discussion.* The base camp's master plan is a tool enhancing force protection, operational readiness, personnel safety conditions, efficient use of limited resources, living conditions and quality of life. Proper zoning and improvements to the condition of the facilities and utilities, with the efficient investment of resources, will increase the quality of life for all soldiers while enhancing force protection.

(1) An organized site plan is a crucial part of a master plan. A poor site layout may have many detrimental characteristics; biological (physical health), social (coordination and cooperation), psychological (improving attitudes), and financial (reduce operational and renovation cost).

(2) The BCPB provides the forum for the camp program managers and experts to make comprehensive, balanced decisions for the future layout of the camp facilities and infrastructure. The board will continue to periodically meet for review and refinement of the plans based on mission and other changes, with the consistent goal of providing the soldiers a quality living and working environment at least cost.

f. *Responsibilities.*

(1) The ASG commander is responsible for all master plans developed within the task force. ASG Commander will:

- (a) Review and approve all BCMPs and updates.

Deleted:

- (b) Return to base camps, through the DPW, unapproved BCMPs, or unapproved portions thereof, for reconsideration and resubmission before final approval.
- (c) Forward Joint Acquisition Review Board (JARB) requests and other documents to HQ, USAREUR for approval as appropriate.

(2) Directorate of Public Works (DPW) will:

- (a) Be the Commander's designated representative for the overall implementation of the base camps' master plans.
- (b) Facilitate and assist base camp commanders, and assure consistency in conduct of BCPBs.
- (c) Prepare guidance, assist and educate the BCPB on the planning process.
- (d) Attend, as advisor and non-voting member of each base camp's BCPB.
- (e) Will maintain and become central repository of all BCMPs and BCPB minutes of meetings and maintain consistency of BCMPs through rotations of units, commanders, and camp mayors.
- (f) Advise and recommend to ASG Commander approval/disapproval of BCMPs.
- (g) At direction of ASG Commander, return disapproved portions of BCMPs to camps for reconsideration, re-submittal, and approval.
- (h) Advise the ASG Commander concerning any controversial issues surfaced in any of the BCPBs.
- (i) Assure that JARB board is advised of any JARB candidate projects that are inconsistent with the approved BCMPs.
- (j) Transmit commander's guidance and standards to the BCPBs for use in preparation of BCMPs and seek out, as appropriate, higher headquarters guidance, coordination, and technical expertise for actions not strictly organic to the ASG.

(3) BSB / AST Commanders will:

- (a) Chair the BCPB.

- (b) Be responsible for formulation of the BCMP and any changes to it, assure submission of the plan and changes/updates through the appropriate brigade commanders, and the DPW to the ASG commander for approval.
 - (c) Approve/sign the BCPB minutes and assure timely submission through the chain to ASG Commander.
- (4) Base Camp ASTs / Installation Coordinators will:
- (a) Conduct BCPBs periodically as required in this SOP and as directed by the base camp or Task Force Commander.
 - (b) Serve as executive secretary for BCPBs and submit minutes of BCPB meetings through the DPW to the ASG commander for approval.
 - (c) Chair the BCPB if directed by the base camp commander.
 - (d) Ensure all projects submitted to the JARB process are consistent with the BCMP.
- (5) Commanders of major assigned units, tenants, and supported activities at the camps will:
- (a) Identify and develop facility requirements to support their missions, and ensure these requirements are incorporated into the camp's approved Master Plan.
 - (b) Provide a voting member to the BCPB.
- (6) Members of the Base Camp Planning Board (BCPB) will:
- (a) Monitor development of the Base Camp Master Plan (BCMP) and make recommendations to the AST/BSB Commander for ASG commander approval.
 - (b) Ensure the BCMP addresses all facility requirements for all activities on the camp and supported sites.
 - (c) Ensure the BCMP reflects changes in camp mission.
 - (d) Ensure the BCMP plans for anticipated growth or reductions in units and activities.

- (e) Ensure camp changes are in accordance with BCMP-approved zoning, aesthetic, and traffic considerations.
- (f) Make recommendations to the camp commander concerning requirements to update base camp master plans.
- (g) Advise the camp commander on priorities for large projects with significant impact on the camp.
- (h) Consider the environmental effects of all decisions relating to the BCMP.

(7) Technical experts from USAREUR DCSSENGR and USACE are available for technical support and guidance above and beyond that available in the ASG. The DPW can request technical assistance directly from DCSSENGR.

g. Commander's Master Planning Goals and Objectives.

(1) Commander's Master Planning Goals:

- (a) Enhance Force Protection.
- (b) Improve Quality of Life.
- (c) Improve Condition of Facilities.
- (d) Efficient Investment of Resources.

(2) Commander's Master Planning Objectives:

- (a) Establish a vision and future direction for attaining the correct balance of facilities/real estate to effectively support the mission.
- (b) Enhance power projection capability in a contingency environment and still reflect a quality environment (maintain at least a minimum standard) in which to live and work.
- (c) Improve living conditions and quality of life to enhance soldier readiness.
- (d) Establish the framework for managing limited resources.
- (e) Identify deficiencies and costs.
- (f) Minimize detrimental environmental impacts.

h. Master Plan Components.

(1) *Long Range Component.* The Long Range Component is an assessment of what the camp should look like five years in the future. It illustrates infrastructure, transportation flow, zoning, aesthetics and signage. The following items make up the Long Range Component (items with “*” are owned/updated by the BCPB chairman and executive secretary for the BCPB):

- (a) Long Range Analysis. *
- (b) Environmental Baseline Analysis (DPW Environmental ICW Camp ECO).
- (c) Utilities Assessment (DPW ICW Camp and Camp Manager).
- (d) Transportation Assessment. *
- (e) Land Use Analysis/Zoning Plan. *
- (f) Physical Security Plan (Overlay). *
- (g) Fire Protection Plan (Overlay). *
- (h) Installation Design Guide (DPW provided).
- (i) Capacity Expansion Analysis. *
- (j) Supporting Graphics/Overlays. *

(* - Critical items are the responsibility of the BCPB chairman and BCPB executive secretary.)

(2) *Capital Investment Strategy.* The Capital Investment Strategy analyzes shortfalls and excesses in facilities through a Tabulation of Existing and Required Facilities, and identifies preferred COAs to solve the imbalance. The recommendations (solutions) must be consistent with the Long Range Component.

(3) *Short Range Component.* The Short Range Component of the Master Plan is the immediate or temporary solution to facility imbalances, until a permanent solution is found. Temporary solutions can include relocations or temporary diversions in uses of facilities, and temporary construction until a more permanent solution is reached. The Short Range Component includes site-specific graphics with locations of projects. The following pieces make up the Short Range Component:

- (a) Overview of Requirements - An assessment of how to “get well”, analysis of alternatives, evaluation and selection of preferred alternatives, and narrative justification for selected COA.
- (b) Assets/Facilities Investment Plan.

(c) Environmental Documentation (DPW provided).

(d) Assets Disposal List.

(e) Supporting Graphics.

i. *The Base Camp Planning Board (BCPB).*

(1) Functions of the Base Camp Planning Boards (BCPB) are:

(a) Act as the camp's "Board of Directors" to ensure the orderly development and management of the camp's facilities (and supported forward operations bases and outposts) in support of the mission.

(b) Guide the development and maintenance of all components of the BCMP.

(c) Coordinate camp planning with the following:

1. Adjacent or nearby camps.

2. Affected host nation agencies (actions/issues shall be forwarded to DPW for coordination through G-5 to host nation).

(d) Ensure the BCMP:

1. Addresses facility requirements for all activities of the camp and supported areas.

2. Reflects changes in the camp's mission.

3. Projects for growth or reduction in units and activities assigned to the camp, and projected relocation of units.

(e) Determine installation design guidelines and adhere to standards.

(f) Review funding projections and advise the camp commander of priorities and COAs.

(g) Ensure maximum efficient use of existing facilities.

(h) Project plans and projects consistent with good environmental stewardship.

(i) Make recommendations on and space utilization.

(2) Composition of BCPB. Minimum composition of the BCPB in each of the camps shall be the following:

- (a) Chairman. The Camp Commander is Chairman. The Camp Commander may appoint a subordinate to serve as Chairman.
- (b) Voting members. Voting members shall consist of the following:
 - 1. AST/BSB Commander:
 - a. Serves as BCPB Executive Secretary
 - b. Provides staff support and administrative assistance in conduct of the BCPB
 - 2. The chief of each principal and staff section (proponency) on the camp. Proponency representatives, at a minimum, should include the following:
 - a. Personnel/MWR
 - b. Operations/Intelligence
 - c. Logistics
 - d. Security and/or PMO
 - e. Safety
 - f. Information Management
 - g. Signal
 - h. Force Protection
- (c) Associate non-voting members (optional/as applicable, except DPW, which is mandatory):
 - 1. DPW serves as advisor/facilitator to the boards.
 - 2. CSM.
 - 3. Associated Camp(s) representative, as applicable.
 - 4. Contractor's Base Camp Manager.
 - 5. AAFES Manager or representative.

(3) Meetings.

- (a) The BCPB will meet at least quarterly.
- (b) The Executive Secretary (Camp Mayor) will have minutes recorded of BCPBs. The Executive Secretary will prepare the meeting agenda, read-ahead packets, and other administrative requirements. The minutes will record those voting members in attendance and those absent, associate (non-voter) attendance; and topics discussed, to include issues, points of discussion, and board recommendations with vote tally.
- (c) The board is required to recommend formal approval for:
 - 1. Components of the BCMP.
 - 2. Installation architectural/design themes.
 - 3. Major projects (projects > \$50,000) in prioritized order to be submitted to JARB and higher HQ for funding and approval.
 - 4. Other items within the purview of the board's charter, as designated by the base camp commander.

3. STANDARDS FOR MAIN BASE CAMPS. Main base camps are those occupied by a battalion task force or larger unit (500 population or more.) They are continuously operated camps with command, staff, and logistic functions. The standards outlined in this section apply to all main base camps. Table 1 shows the initial and end state for each type facility.

Facility	Initial	End State
Housing	Tier I Tent	SEAhuts or Container
Latrine	Chemical	AB units or SEAhut
Shower	Tent	AB units or SEAhut
Septic	Lagoon	Treatment Plant
Office	Tier I Tent	SEAhut or Container
Helipad	M2 Matting	Concrete
Aviation Fuel	HMMT Tanker	Steel Lines and Tanks
Aviation Maint	Tent	Clamshell Tent
Runway	Gravel	Paved
Taxiway	Gravel	Paved
Medical	Medical Tents	SEAhuts or Metal Prefab
Kennel	Container	Wood Frame on Concrete
Storage	MILVAnS	Warehouses
DRMO	Tent	Metal Prefab, Gravel Lot
Roads	Gravel	Asphalt
Water	Bottle	Wells, Treatment Plants
Fuel	Bags	Metal Tanks
Wash Rack	Gravel	Elevated Rack, Oil Water Sep
Electric	Generator	Local Power, Gen Back Up
DFAC	MKT Trailer	SEAhut
Ed Center	Tent	SEAhut
Post Office	Tent	Metal Prefab
PX / Warehouse	Tent	Metal Prefab
Barber	Tent	SEAhuts or Container
Alteration	Tent	SEAhuts or Container
Pressing	Tent	SEAhuts or Container
Laundry	Tent	SEAhuts or Container
Fire	Tent	Metal Prefab
Fitness Center	Tent	SEAhut / Metal Prefab
Field House	Tent	Metal Prefab
Athletic Fields	None	Grassed Fields with Lights
Communiuty Center	Tent	Metal Prefab
Theater	Tent	Metal Prefab
Chapel	Chapel-in-a-Box	SEAhut
Perimeter Fence	Triple Standard	NATO Std (Chain Link w/outrigger)
Perimeter Lights	Gen Sets	Fixed Lighting

Table 1 Initial and End State Facilities

a. *Roads:* Primary roads identified by commanders on base camp master plans are authorized for paving with asphalt. Primary roads are considered to be the major camp arteries that support the majority of vehicle traffic through the camp. Concrete turning

pads are authorized to prevent damage to asphalt roads. Secondary and perimeter patrol roads are to be surfaced with gravel.

b. *Housing Standards:* Soldiers and civilians are initially housed in tents until SEAHUTs or containers are emplaced. Table 2 gives the authorized square footage for UPH billeting space for soldiers and civilians, IAW AR 210-50, Installation Housing Management. Figure 1, shows how SEAhuts are organized into company groupings ("clusters"), with a collocated latrine and shower container. A standard SEAhut is 512 square feet (SF), with a standard SEAhut cluster (Davidson) having 5 bays and a latrine, for a total of 2,944 SF. SEAhut structures provide a higher level of safety and comfort by providing personnel with linoleum flooring, electric heat and cooling (if the climate requires), electric lights and electrical connections. SEAhuts organized in this manner minimize the distance personnel are required to walk to shower and latrine facilities. Finally, housing organized in this manner increases unit cohesion by maintaining company, platoon and squad integrity.

Category (See remarks)	# per Std SEAhut (16' x 32')	# per Std Container (8' x 20')
E1-E5; GS-5 & below, NF 1/2; Civilian WG 1-11 or WL 1-5; Contracted laborers	6	2
E6-E7; WO-1/2; O-1/2; GS 6-9, NF 3; civilian WS 1-7; educators Schedule C1-3 all civilians / contractors (>6 months)	4 4 (private rooms)	2 1
E8, CW-3/4, O-3/4; GS 10-12, NF4; Educators Schedule C4 and up, D-F, M-O and teaching principals - schedule L;	3	1
E-9, CW5, O-5/6; GS 13-15, NF5;	2	1
O7; SES; NF6	1	1

Table 2 Housing Standards

(1) Private (containerized or partitioned SEAHut) billeting space for the housing of long-term (exceeding 6 months) government civilian / contractor employees will be considered in camp planning. The ASG Commander makes any decisions to resolve grade equivalencies and private room availability for long-term civilian / contractor employees at existing camps.

(2) SEAhuts will have electric heat, lighting, and eight (8) fixed duplex electrical outlets. All living units will be equipped with hard-wired smoke detectors and fire extinguishers. Where practical, housing should be configured into company clusters with ablution units collocated within the clusters. Standard walkways of a minimum of 5 feet wide will be constructed for each side of the SEAhuts to allow personnel to walk under cover to ablution unit. Sufficient space will be maintained between structures to

allow fire trucks and other safety vehicles driving space. Carpet is not authorized in living or office areas.

(3) Furniture authorized for deployed soldiers and civilians:

- one bed, bunk/single
- one mattress single foam rubber with non plastic shell
- one foot locker
- nail boards on walls of living areas
- locally built shelves made of plywood

Units presently exceeding this standard are authorized to keep the excess furnishings on hand.

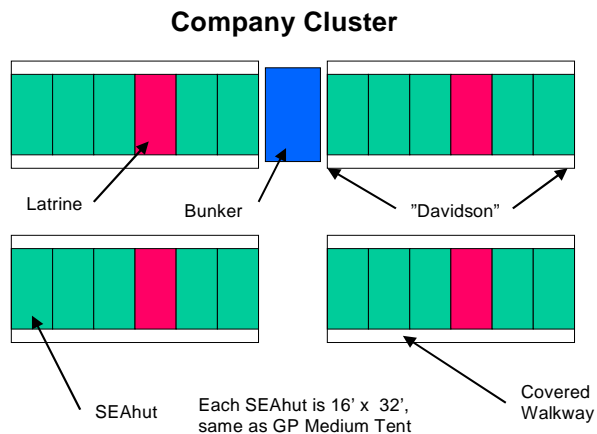


Figure 1

c. *Surge Housing*: All base camps will maintain the ability at all times to house 10% of total population as transients and surges. During surge periods that exceed 10%, Tier II tents (maximum) will be used for housing. Tier level for tents is as follows:

(1) Tier I consists of a GP Medium Field Tent (16' x 32') with plywood floor panels.

(2) Tier II consists of a GP Medium Field Tent with plywood floor panels, two electric light outlets, two electrical outlets and space heaters.

(3) Tier III consists of a GP Medium Field Tent, full wooden frame for tent, plywood panel sidewalls, raised insulated flooring, four electric light outlets, eight electrical outlets and space heaters.

d. Toilets and Shower Facilities:

(1) Toilet and shower facilities will be lighted, heated and equipped with hot and cold water. Sanitary Wall Board (SWB) is the preferred wall covering for latrines. Sheetrock, if used, must be waterproof, with a waterproof finish for cleaning.

(2) A shower head/population ratio of 1:10 is the goal for all base camps.

(3) A Toilet/population ratio of 1:10 is the goal for all base camps.

e. *Unit Facilities:* Company facilities have electric heat, solid working surfaces for conducting vehicle maintenance, improved electric lighting/ electrical connections, better hazardous material handling and disposal facilities and a safer working environment. Where practical, unit facilities will be housed in SEAhuts or modular containers. Table 3 gives the standards for office size.

PERSONNEL	MAXIMUM NSF/PERSON
Private Offices	
Brigadier and Major Generals	300
Colonel, O5 Commanders, GS-15, TF CSM	200
LTC, O4 Commanders, GS 13-14, Bde-Bn CSM	150
MAJ, O3 Commanders, GS-12, SGM, ISG	100
Utilization Guidelines for Open Offices	
GS-9, E8, WO, O1-O3	110
GS-8, E7	90
Stenographic and Clerical Positions	60

Table 3 Utilization Guidelines for Office Space (AR 405-70)

NOTE: *Applies ONLY to military units/organizations and personnel. Admin space for MWR and commercial functions are discussed separately.*

To calculate total building size, add an additional 40% for central files, hallways, storage, copier, mail, and conference rooms.

(1) *Task Force HQ:* The size of the Headquarters is situation dependent, based on the standards in Table 3. USAREUR headquarters has approval authority over the final design. The headquarters should include, but is not limited to:

- (a) Chain-link security fence with barbed wire top.
- (b) Gravel parking lots.
- (c) Exterior security lighting.

- (d) SCIF.
- (e) A facility to house the TOC operation.
- (f) CG building.
- (g) SEAhut style buildings for primary staff offices.
- (h) Communications platforms and shelters.
- (i) Command bunkers.
- (j) Guard shacks.

(2) *Brigade Facilities:* A maximum of 3,840 square feet of space is authorized for the brigade headquarters. Office space will be contained in SEAhuts or modular containers equipped with heating, electric lighting and fixed electrical connections.

(3) *Battalion Facilities:* A maximum of 2,944 square feet of space, (1 Davison SEAhut), is authorized for housing the HQ elements of each battalion size unit. This space is intended to house the battalion's Command Group, S2/S3 sections, TOC, ALOC, Battalion Communication shop and the Battalion Maintenance Officer administration space. Office space will be contained in a SEAhut or modular container-type enclosure equipped with heating, electric lighting and fixed electrical connections.

(4) *Company Facilities:* Each company-sized unit is authorized a maximum of 1024 square feet (2 SEAhut bays) of office space for the administrative office, orderly rooms, and supply room. Office space will be contained in SEAhut or modular type containers equipped with electric heating, electric lighting and fixed electrical outlets.

(5) *Aviation Facilities:*

- (a) *Helicopter Pads:* Helicopter landing and parking pads will initially be AM 2 surfaced to prevent foreign object damage (FOD). Helicopter landing and parking pads will be concrete, with asphalt aprons. Taxiways will be asphalt. The pads will have adequate grounding rods and tie-downs. All soil in the immediate area of the pads will be planted in grass or gravel large enough not to become FOD. Hot pads will have Hesco bastions or similar material to prevent damage from accidental missile discharge.
- (b) *Vehicle Parking Area:* A 1000 square meter vehicle graveled parking area is authorized for helicopter pads. This area is intended for the parking of service and maintenance vehicles associated with helicopter operations.
- (c) *Lighted Landing Pad:* One helicopter-landing pad on each base camp will be outfitted with nighttime landing sights. This will facilitate landings of helicopters for emergency operations.

- (d) *Forward Area Refuel Point (FARP)*: If pipe is used it will be double walled stainless steel with return line. Aviation quality fuel filters will be used. Pads will be concrete, as will any area where fuel spills are likely. Blast protection will be installed around the fueling pads.
- (e) *Control Tower*: Control height will be of sufficient size and height for unobscured vision of the entire airfield. It can be either wood or metal, grounded, with adequate priming and painting to prevent weather damage, and minimize slip hazard in bad weather.
- (f) *Aviation maintenance*: Aviation clamshell tents are authorized, total number based on mission requirements. Tow ways will be paved from the helipads to the clamshell tents. Clamshell floors can be sand filled plywood, asphalt, or concrete.
- (g) Aviation ground vehicle maintenance considered separately under Maintenance Facilities.

(6) *Medical Facilities*: All plans for health clinics, dental clinics, and hospitals will be developed in coordination with the supporting Health Facility Planning Office or through the Health Facility Planning Agency, OTSG (2). These offices will assist in all aspects of design and construction management and are available to support the medical mission of the warfighter in all categories of operations worldwide. Please contact: The Health Facility Planning Office (HFPO), European Regional Medical Command (ERMC), Office of the Command Surgeon, USAREUR: Located in Heidelberg Germany, at DSN 371-2113. All plans for medical facilities will be approved by OSURG, USAREUR.

- (a) The following guidance is provided as a “rule of thumb” for basic planning of base camp medical/dental facilities requirements. The actual requirement is directly related to the medical and dental mission and care expectations of the operational command, which should be coordinated with HFPO- Europe.

1. Aid Station: (Reference: FM 8-10-4 the Medical Platoon) the doctrinal battalion sized aid station consists solely of soldiers organic to the particular TOE unit. Normally each battalion aid station has one SEAhut bay (512 square feet).

a) The Battalion Aid Station mission is strictly Echelon I medical care (no dental), and is oriented to provide basic medical assessment, treatment, and stabilizing for evacuation to higher echelons of medical care. No radiology, laboratory, or holding capabilities are intended. On average it is meant for a single sized element (battalion) of roughly 1000 soldiers with immediate transfer to higher echelons of medical care as required.

b) Space Requirements: A rule of thumb for these facilities is to provide one examination room (100 NSF) per provider (or three exams per two providers), 100 NSF for storage, 130 NSF for admin/entry/waiting, and toilet facilities as needed. This set of criteria is designated for one Aid Stations per 750 soldiers. At a minimum the space will be housed in a SEAhut or modular container-type enclosure that is equipped to provide electric heating, electric lighting and fixed electrical outlets.

2. Clinic: For base camps that require increased medical and dental support over that of a TOE battalion/aid station configuration. To meet this end, clinics are configured and staffed to support each base camp established, based on population, medical staffing, and contingency mission.

a) Space Requirements: The base camp clinic should be planned to support both medical and emergency dental care to the soldiers and civilians. More routine care for dental may also be accommodated without a major impact on additional space needs. To support this expectation basic radiology, radiology development, and laboratory functions are required. The dental and medical may be collocated in the same structure to reduce redundancy of radiology and laboratory functions. Table 4 illustrates basic square footage requirements to meet the medical and dental care mission. Additional space is required to meet holding capacity as dictated by the mission's emergency contingency plan. A minimum of two single toilets are recommended to be included in the clinic, however, consideration should be given to the location of the nearest restroom facilities and the size of the overall clinic.

Space	NSF	Notes
Medical	1660	Based on the organic medical TOE staffing of a typical armor or infantry battalion (Add 100 nsf per doctor/exam room) includes the functions listed above in "clinic requirements".
Dental	500	Minimal requirement for a single dentist and one hygeinist (Add 115 nsf per dentist or DTR) two DTR's per dentist may be provided depending on workload.
Holding	340	Minimal requirement for three cot holding capacity. (Add 80 nsf per additional holding bed required)

Table 4 Medical Clinic Authorizations

NOTE: These are net square footages only. A factor of 10% should be added for a gross estimate. In addition, a smooth transition for litters (ramping if necessary) should

be added for entry into the main building with a direct access into to the trauma room. A double door 6' entryway into the facility and into the trauma room should also be considered.

<i>If a separate mechanical space is used:</i>	<i>11% of NSF</i>
<i>Circulation:</i>	<i>35% of NSF</i>
<i>Walls and partitions</i>	<i>12% of NSF</i>
<i>Half Areas:</i>	<i>1.5% of NSF</i>
<i>Total Gross Square Footage</i>	<i>159.5% of NSF</i>

Table 5 Grossing Factors

b) For final planning the exact number of physicians and dentists should be obtained from the command. For “rule of thumb” planning: Table 4 is based on an average of 1200 total soldiers per base camp. Add one physician for every additional 750 soldiers, and add one dentist for every additional 800 soldiers. The basic base camp clinic will contain the following spaces: Waiting, Command/Control, Receiving, Pharmaceutical Storage, Class VII (Medical) Storage, Exam Rooms, Trauma/Treatment Room, Radiology (for medical and dental), X-ray developing, Shared Administrative, Dental Treatment Room (DTR), Dental Sterilization/Storage, minimum of two toilet rooms, Soiled Utility, and Laboratory. If allowable, a small separate countertop area for Dental Lab could increase the scope of care from emergent to routine in the future. Additional space to consider is patient holding expectations at the clinic, and others as dictated by mission requirements.

c) Special Requirements: The following spaces will include a sink with running hot and cold water: Exam Rooms, Trauma/Treatment Rooms, Laboratory, DTR, and Dental Sterilization. Radiology rooms will require lead shielding appropriate to the type of radiology equipment utilized. This includes all four walls and servicing door (lead shielded). The minimum thickness level and specifications for installation may be determined through consultation with the supporting Health Facilities Planning Office or Preventive Medicine Office. Specific consideration should be given to ensure ventilation from the x-ray development, dental sterilization, and laboratory spaces. Finish materials should support infection control measures by incorporating smooth washable surfaces with limited seams throughout. All interior partitions shall be constructed from the floor to the underside of the ceiling and will not be undercut or left open at the top. Lighting and electrical requirements for each space will be coordinated with HFPO in consideration of existing and planned medical equipment.

d) Clinic Location: Locate the clinic on the base camp in such a way to support the command's mission requirements. Consideration should be given to daily sick call operations and the relative proximity to the troop

population and emergency medical operations (evacuation operations both into and out of the clinic by ground and air). The standard base camp clinic will be sized to meet the medical and dental care expectations of the population stipulated in the Operations order and supported by the medical staff. The standard or typical level of care expected exceeds the basic Battalion Aid Station (Echelon I medical care) model of FM 8-10-4. The peace stabilization base camp model is based on Echelon I (plus) to Echelon II levels of medical care. (FM 8-10-1: The Medical Company - http://www.adtdl.army.mil/cgi-bin/atdl.dll/fm/8-10-1/8-10-1_toc.htm/).

3. Hospitals: All planning for hospitals in theater of operations including alteration or modification will be deferred to the Health Facility Planning Agency, OTSG, Falls Church Virginia, or to the Health Facility Planning Office- Europe.

(7) *Motor Pool Facilities:*

- (a) Maintenance Facilities: A 1200 square foot fixed maintenance bay built on a concrete base is authorized for each company-sized element. The facility will be equipped to provide heating and electric lights both inside and outside the facility as well as fixed electrical connections, exhaust fans, and compressed air. A prefabricated metal two story building with concrete aprons and exterior lighting is the standard.
- (b) Maintenance Administration: A maximum of 320 square feet of office space is authorized for each company-sized element. At a minimum the office space will be contained in a SEAhut or modular container-type enclosure equipped with heating, electric lighting and fixed electrical connections.
- (c) Maintenance Pads: Each company-sized element is authorized a parking area of a sufficient size to accommodate outside maintenance of unit vehicles. Pads should be large enough to accommodate the largest vehicle in the unit plus a recovery vehicle. Battalion maintenance pads for tracked and wheeled vehicles will be constructed from concrete. Maintenance pads will be located near unit maintenance bay, usually as aprons to a consolidated maintenance facility.
- (d) Fuel Truck Parking: Secondary containment pads equipped with a catchment sump and grounding rods are authorized for parking fuel trucks.
- (e) Wash Rack: A 60' long elevated vehicle wash rack equipped with an oil/water separator is authorized for each base camp. Wash racks shall be designed to fit the largest and heaviest vehicles in the fleet. Flat concrete pads can be used for washing of large vehicles.

- (f) **Hazardous Waste Collection Points.** A covered hazardous waste collection point, built on an elevated pad to be out of contact with ground surface. A concrete pad is authorized for Battalion size motor pool but is not required. Base camp commanders may authorize additional collection points on each camp as required.
- (g) **Parking lots** are to be gravel, of sufficient gravel size, slope, and drainage to minimize weather effects and increase safety. Concrete turning pads are authorized for parking of tracked vehicles. The purpose is to minimize damage to gravel parking lots. Chain link fences around motor pools are not authorized unless they are part of the perimeter fence. Wooden parking lot stripes are not authorized.
- (h) **Direct Support Maintenance (Task force)** is authorized 1000 square feet per battalion-sized task force supported, admin space included. Prefabricated metal buildings with concrete floors, and designed to meet 3rd shop requirements are authorized.

(8) **Kennels:** Military working dogs are authorized a lighted, climate controlled kennel, and an exercise yard. Kennels will have individual stalls (dog run) for each animal, and a sealed concrete floor for health reasons and ease of cleaning. Kennel floor drains should be connected to a sewer system. The kennel planning factor is 145 square feet per dog, which includes kitchen, tack room, and interior dog run, (36 square feet per dog). Exterior dog runs should be 48 square feet per dog, with a connecting guillotine-type door to the interior dog run.

(9) **Morgue:** Each morgue is authorized 512 square feet of workspace and a refer van. Privacy screen is authorized around the entire facility.

(10) **Warehouses:** Warehouses are authorized wherever a 2 year pay back or less can be shown using the criteria of reduced lease cost, reduction of weather damage, increased shelf life, and other relevant factors. Warehouses are preferred over MILVANS for long-term storage. Every effort will be made to reduce the number of leased MILVANS. Leased MILVANS will not be modified; holes cut or parts welded on. Warehouses will not be used for long term housing of excess government property

(11) **DRMO:** One recycling facility per task force is authorized at a size of 1 square foot per soldier. Should have concrete or asphalt floor capable of handling forklifts. Gravel holding yard of 2 square feet per soldier authorized.

(12) **VIP/guest Quarters:** Each TF headquarters is authorized 2944 square feet (1 Davison SEAhut) for VIP and guest quarters. All other main operations bases are authorized 512 square feet of VIP/ guest quarters. Forward operations bases and advanced operations bases are not authorized VIP facilities.

(13) **Force Protection and Safety. Minimum Force Protection Design Standards** – Anti-terrorism force protection and physical security in the expeditionary

environment presents unique challenges to planners, engineers, and security forces. As is the case for fixed facilities, the type and severity of the threat along with the desired level of protection will be the primary considerations in the selection of the anti-terrorism force protection and physical security measures. These considerations will affect decisions on various issues such as the types of vulnerability reduction measures and the physical layout of facilities, facility groups, and infrastructure. Important factors in planning security measures in the expeditionary environment include the availability of existing facilities, the type of structures in which people live and work, existing natural or man-made features, type and quantity of indigenous construction materials, available real estate and layout of utilities and other base infrastructure. For pre-existing buildings, the standards for existing buildings are to be used.

(a) Facility Access.

1. Select sites away from public roads or other uncontrolled areas.
2. Maximize use of natural or man-made features to obscure vision from potential threat vantage points.
3. Limit vehicle approach speeds.
4. Minimize vehicle access points.
5. Provide an entry control point with a well defined holding area for unauthorized vehicles and vehicles being searched. The holding area should be outside of prescribed minimum standoff distance.
6. Separate functional areas requiring frequent vehicle access (e.g., kitchens, industrial areas, retail areas, refuse collection points, etc.) from billeting areas.

(b) Site Characteristics.

1. Maintain good housekeeping by keeping areas within 9-meters of shelters or structures free of items other than those items that are part of the infrastructure.
2. When possible, position exterior doors so they cannot be easily targeted from the installation perimeter or uncontrolled vantage points.

(c) Facility Standoff / Separation.

1. Maintain a minimum standoff distance of 20-meters from inhabited transportable structures to installation perimeter.

2. Clearly delineate the installation perimeter. Options include, but are not limited to, fencing, concertina wire, barricades, counter-mobility barriers, ditches, police tape, or warning signs.
 3. Maintain a minimum separation of 18-meters between billeting groups.
 4. Maintain a minimum separation of 3.5-meters between billets in a row.
 5. Maintain a minimum separation of 9-meters between rows of billets.
 6. Limit unprotected glazing to 5% or less of the wall area.
 7. Locate mail and supply handling areas at least 20-meters from inhabited transportable structures.
- (d) *Threat Specific Standards.* In addition to the minimum standards described above, the DoD Security Engineering Manual provides guidance for incorporating additional measures to mitigate specific threats. That guidance includes design strategies for mitigating the effects of specific aggressor tactics to defined levels of protection and the effect on building cost of applying those measures.
 - (e) *Generators:* Wood or chain link fence will be installed around all generator locations. Enclosing generators in wooden buildings is not authorized.
 - (f) *Perimeter: Fences,* either chain link or concertina, are authorized around the camp perimeter. Berms and sniper screens are authorized to block vision. Perimeter lights are authorized. A gravel perimeter road is authorized inside the berm. Culverts underneath the perimeter fence will be caged to prevent persons from crawling through.
 - (g) *Gates:* Covered inspection areas on the main gates are authorized as required by weather conditions. Gates will have lighted, heated, guard shacks. Tilt bar and swing gates are authorized. Clearing barrels will be located inside the gates.
 - (h) *Walkways and decks:* Pressure treated, rot-resistant lumber is the standard. If not available, exposed lumber will be painted with a rot resistant primer. Walking surfaces will be textured with sand paint or other method to reduce slipping on ice and frost. Lights will be provided wherever steps cannot be seen at night.
 - (i) *Buried utilities:* The DPW will maintain a database of all buried utilities. No job will be closed out until new underground utilities have been

properly documented. No work will commence on a project until a dig permit has been obtained. Buried utilities will have caution tape at least one foot above the utility lines. Buried electrical lines will have signs posted at every turn in the line and wherever else needed by the terrain.

- (j) *Bunkers*: Only bunker designs approved by the Corps of Engineers Engineer Research and Development Center (ERDC) will be constructed. Sand bag bunkers will have the sand bags protected from solar radiation and the wooden core protected from rot. Design factor is 110% of camp population for bunkers and fighting positions. Normal planning factor is that 50% of the population will be on the perimeter, with 50 % in bunkers.
- (k) *Guard Towers*: Guard towers will be placed so every tower is visible to the immediate towers on the right and left and so there is no dead space on the perimeter. Towers will have heat and light. Towers will be hardened against small arms and mortar fire.
- (l) *Constructed fighting positions*: Overhead cover design on fighting positions must be approved by the task force engineer. Fighting positions must be inspected regularly for deterioration.
- (m) *Theaters and similar multipurpose facilities*: These facilities will have a barrier to minimize a car bomb threat. Barrier can be a berm, Hesco bastions, Jersey barriers, or other method capable of stopping a car or truck. Air conditioning will be fenced to reduce terrorist threat of gas introduced into the duct systems.
- (n) *Water Plant*. Water plants, wells, storage tanks, and bladders will be fenced.

4. UTILITIES. Utility systems shall be designed based on current applicable Military Handbooks, technical manuals and guidance. Engineering calculations will be used to size the system. All utility designs will be approved by DCSENG, USAREUR before construction begins.

a. *Electric Power.* Where economically supportable and practicable, base camp power grids will be connected to commercial power. Smaller or remote base camps that cannot be economically connected to the commercial power grid are authorized to construct central power plants capable to support 125% of camp maximum demand load, or use distributed generators of sufficient capacity to support maximum demand loads. An economic analysis shall be completed to determine the most cost effective power plant/generator solution. In all cases, critical facilities will be identified in the master plan by the ASG Commander and have back-up generator power. Non-Critical facilities that have stand alone distributed generators will not have any back-up generator power. However, a maximum of 10% of total generators (one minimum) serving non-critical facilities are authorized as reserve generators that can be placed in service quickly in case a generator serving a non-critical facility has a major failure. Determination of appropriate size for generators is not a simple task, as many generators are typically over-sized for loads served. Sizing of generators shall include an evaluation of actual and expected loads considering appropriate demand and load diversity factors, along with a review of any historical demand load data for similar base camps. Engine-generator sets may need de-rating to account for use of JP-8 fuel (rather than diesel), altitude, temperature, and starting requirements for any large load specialized equipment (e.g., hospital X-ray machines). In many cases, load banks have been used to ensure adequate performance of under loaded engine-generator sets. Under loaded engine-generators may operate unsatisfactorily, fail prematurely, and require more frequent maintenance and overhauls due to excessive formation of carbon deposits in the engine. The use of load banks and premature engine overhauls can be avoided if engine-generators are "right-sized" for the load. A complete and thorough analysis of the affected electrical system must be accomplished to ensure power plant requirements are properly defined. Leasing of generators for periods greater than six months is generally not cost effective. Where stand-alone distributed generators are the main power source, they will be sized so no generator set is loaded less than 50%.

b. *Heating, Ventilation & Air Conditioning (HVAC.)* Heating/cooling will be provided to office spaces, admin areas, and soldier living spaces in temporary standard structures such as SEAHuts. Camps will utilize installed central heating/cooling systems where already existing or as economically feasible. Tents will be provided with heating only. Storage areas will only be provided heating/cooling services as needed to address specific storage requirements cited in sub-paragraphs on designated facilities types. Temporary facilities such as SEAHuts will utilize individual environmental control units (ECUs) sized to ensure delivery of heating cooling as follows: standards for maximum indoor temperatures in winter are 68°F and minimum indoor temperature in summer is 78°F. Temperature strips are installed in administrative areas and living spaces wherever ECUs are utilized. Where central heating/cooling systems are pre-existing or have been installed and/or for all other facilities (primarily large facilities such

as Hangars, Recreation Centers, Gyms, etc.), DPWs will monitor installed thermostatic controls to maintain establish temperature standards.

c. *Water*: For main operations bases the order of execution for water is as such

(1) JCC will contract to tie into local municipalities if it is economically feasible, and meets Army health and force protection standards. The installation of a water purifying station such as a UV-60 should be considered in the start up cost on this project.

(2) Installation of wells for potable water is authorized. Water storage distribution systems will be planned for and installed if economically feasible. A minimum of 2 wells per camp, one primary and one for back up are authorized. The expense of mobilization for drilling equipment represents a major cost of providing a well. Planning will include all wells in the AO for drilling at the same time to reduce mobilization costs. Additional wells may be drilled based on the capability of the first 2 wells to supply the required amount of water. Wells should be within camp boundaries.

(3) Last choice for supplying potable water is trucking potable water and/or bottle water. Trucking in the potable water to storage bags for utilities, ablution units, medical purposes and utilizing bottle water for drinking. The cost of purchasing and maintaining the trucks along with drivers and the reoccurring cost of bottle water to include purchase, transport, storage and waste needs to be included in the initial cost estimate.

d. *Wastewater Treatment Plant*: The initial assessment for a base camp should have a design for the installation of a wastewater plant based on projected size of the camp to include allied forces and local nationals. Coordination with JCC should be utilized to determine if connection to a municipal wastewater treatment plant is economically feasible and environmentally sound. Upgrades to existing sewage treatment plants are authorized to allow for effective treatment of waste being generated on that facility. Connection to local waste treatment facilities should be made only if the facilities meet Army standards. Upgrades will be limited to the expansion of the plant's current capabilities to handle the increased daily flows.

e. *Fuel Storage*: Above ground fuel tanks are authorized for the storage of bulk fuels. Fuel storage bladders will be phased out as the above ground storage tanks become available. Tanks will be constructed IAW existing environmental regulations and installed per manufacturer recommendations. Where it is necessary to use fuel bladders, they will be sited IAW environmental guidelines and will be surrounded by earthen berms to contain any spillage.

f. *Ammunition Holding Areas (AHA)*: Ammunition holding areas will be constructed in accordance with AR 385-64 and DA PAM 385-64. Ammunition holding areas will have containment berms, a fenced and lighted perimeter, graveled access roads and lightning protection for the entire area. Ammunition will be stored in protective structures (MILVANS) that are out of contact with the ground (on wooden sleepers or on concrete foundations).

5. SOLDIER SUPPORT. The concept for upgrading soldier support facilities is to increase the ability to provide support services to TF soldiers and to provide a safer working environment. Levels of soldier support are shown in Table 6 below.

	MAIN OPERATIONS BASE	FORWARD OPERATIONS BASE	OUTPOSTS
AFN STUDIO	YES	NO	NO
DFAC	YES	YES	NO
CHAPEL	YES	NO	NO
ED CENTER	YES	NO	NO
POST OFFICE	YES	MAIL ROOM	NO
SSA	YES	NO	NO
FINANCE	YES	NO	NO
BARBER SHOP	YES	TRUCK	NO
BEAUTY SHOP	YES	TRUCK	NO
PX	YES	TRUCK	NO
CONCESSIONS	YES	NO	NO
LAUNDRY POINT	YES	TRUCK	NO
FIRE PROTECTION	YES	TRI-MAX FOAM	NO
FITNESS FACILITY	YES	YES	1/2 TENT
FIELD HOUSE	YES	NO	NO
ATHLETIC FIELDS	YES	NO	NO
COMMUNITY CENTER	YES	YES	1/2 TENT

Table 6. Soldier Support Levels

NOTE: On main camps where commanders have made the decision to split-base soldier support, MWR or AAFES services or concessions according to the geographic location of the LSAs, the sum of the space allocated for each activity split-based will not exceed the total square footage for that category of facility as determined below in subparagraphs a. through l. Requests for exceptions will be considered by USAREUR on a case-by-case basis.

a. *Dining Facilities:* Dining facilities will provide 640 square feet of dining room space and 320 total square feet of kitchen, admin, and storage space per 75 soldiers and will, at a minimum, be housed in a modular container-type structure. Adequate space for cleaning, latrine, and clothes changing for local national kitchen staff will be provided. Sanitary Wall Board (SWB) will be used in the kitchen and latrine areas. The facility will have electric lighting, electric heating, air conditioning and fixed connections for all electrical equipment. Loading dock can be concrete, asphalt, or treated lumber.

b. *Chapels:* Each base camp is authorized a chapel at a rate 1,624 square feet of space per 1,000 soldiers. The structure will have electrical lighting, Environmental Control Units (ECU) and fixed electric connections and have linoleum flooring installed. Design will be nondenominational. Office space consistent with TABLE 3 (page 13) and AR 165-1 (Chaplain Activities) will be provided for the execution of chaplain functions supporting privileged communications with parishioners.

c. *Education Centers, DLA & MOS Library*: A combination education center and MOS Library of 1,280 SF are authorized for each 750 service members assigned to a base camp. At a minimum, the facility will be housed in a SEAhut or modular container-type structure equipped to provide heating, electric lighting and fixed electrical connections.

d. *Postal Facility*: A fest tent or pre-fabricated metal building built on a pad is authorized to serve as the bulk mail facility. The square footage of this building will not exceed the standard as outlined in DOD 4525.6M, Vol.1, Section 13. The building will provide heating, electric lighting and be equipped with fixed electrical connections. The facility will service Task Force mail for all branches of services. Facility must be 20 meters from any other structure.

e. *Mail Rooms*: Each battalion is authorized a 256 square foot mailroom. This space is separate from the main Task Force mail facility. At a minimum, the space will be contained in a SEAhut or a modular container-type structure equipped to provide heating, electric lighting and fixed electrical connections.

f. *Supply Support Activity (SSA)*: Each task force is authorized 1,000 square feet per battalion-sized unit supported. A Pre-fabricated metal building on a concrete pad, equipped with heat, electric lighting and fixed electrical connections is authorized. A separate 3,000 square foot Central Issue Facility (CIF) is authorized, one per task force. A gravel holding yard with chain link fence is authorized, size based on unit requirements. USAREUR can authorize additional warehouse space on a case-by-case basis under the guidelines listed in the warehouse section of this publication (3E10).

g. *Finance*: Each TF finance center is authorized space by, DOD Vol. 5, Ch 3, policy and procedures for disbursement of funds. This space will be 480 SF per 750 service members. Authorized space can be divided among various camps based on the needs of the task force. This will include space for a 5'x 8' pay cage, 8'x 9' walk-in vault that should be pre-positioned and customer service area. At a minimum, the space will be contained in a SEAhut or modular container-type structure equipped to provide heating, electric lighting and fixed electrical connections.

h. AAFES:

(1) *Barber/Beauty/Alteration/Pressing Facilities*: A barbershop, beauty shop, alteration, and pressing facility are authorized for main operations base. Barber and Beauty shops can be collocated in the same facility. Total authorized for barber and beauty shops on a base is 320 square feet of space per 1,500 soldiers. Alteration and pressing facilities can be collocated in the same facility, if contractor requirements can be met. Total authorized for the alteration and pressing services is 320 square feet of space per 2000 soldiers. The facility will be housed in a SEAhut or modular container-type that is equipped to provide heating and electric lights as well as fixed electrical connections.

(2) Post Exchange (PX): All main base camps are authorized a PX. Each base camp is authorized a PX with a maximum of 2,100 square feet of space per 750 soldiers. Smaller camp PX facilities, when authorized, will be housed in a container type structure equipped to provide heating, electric lights, air conditioning and fixed electrical connections. Additional electrical connections as required are authorized to ensure sufficient, safe electrical power is available for displays and other requirements. Warehouse space for each PX is authorized 1,000 square feet of space per 750 soldiers. Administration offices and support for each PX is authorized 250 square feet per 750 soldiers. Loadings docks and gravel parking lots for delivery trucks are authorized.

(3) Food /Service Concessions Stands: The commander will determine what food concessions will be on his post. Each food concession is authorized 480 square feet per 750 soldiers. Dining/seating is authorized 375 square feet per 750 soldiers. (1) Refrigerated cooler, (3) freezer and (1) dry storage containers are authorized per food court set up. When requested by the local Command, a specialty food concept is authorized 512 square feet, which does includes the seating requirement. Amusement areas adjacent to the food concession are authorized 150 square feet per concession for equipment setup. The Army is responsible for providing basic facilities for these concessions, to include utility hookups. AAFES is responsible for the installation and maintenance of all "AAFES peculiar" items, such as cash registers, display shelves and coolers, stoves, vents, specialty lights and all such similar items.

i. Laundry Collection/Distribution Point: 512 square feet of space per 500 soldiers in a SEAhut or containerized structure is authorized for a Laundry Collection/Distribution Point. At a minimum, the facility will have electric heat, lights and fixed electric connections.

j. Fire Protection: Provide Fire and Emergency Response services in accordance with IAW DODI 6055.6, NFPA 403, and AR 420-90: Fire and Emergency Services.

(1) Only base camps with a population of 1,000 or more (permanent residents – all nations/services on the Base Camp), US Air Force flight operations, or Army rotary-wing flight operations where flight activity exceeds 40 movements per day, over a six month average, will have dedicated full time response services. Camps that do not meet these criteria will be provided with Tri-Max portable foam fire suppression systems and soldiers at these locations will be properly trained on the use of these devices, appropriate number needs to be determined by DPW and AOR Fire Chief.

(2) Where full time Fire response is authorized above Fire and emergency services will be available 24 hours a day seven days a week. One fire station per base camp can be built to house fire fighters if appropriate and house the fire trucks and as approved by the DPW.

(a) Structural fire fighting crews will be four person crews at all times, a fifth person will be assigned to drive and operate the tanker. A 6th person as a Fire Chief/Inspector will be available during normal working hours, non-

shift. One fully equipped Structural Class A engine and one 2,000 gallon tanker will be provide for each base camp with a population of 1,000 or more. One ARFF vehicle will be provided when 40 aircraft movements a day are anticipated. It will be crossed staffed with the existing structural crew. Those bases that have fire hydrants capable of meeting fire suppression needs are not authorized a 2,000-gallon tanker.

- (b) Additional ARFF vehicles will be provided when the size of aircraft and the number of movements increase (as required by NFPA 403.) When additional ARFF or structural fire fighting companies are required staffing will be required (a minimum of 3 on each ARFF vehicle, 1 on each tanker and 4 on each structural engine at all times. Additional personnel (3-5 depending on the hours assigned) will be required to staff an around the clock alarm center.
- (c) Fire fighting facilities should be co-located and fire fighters should live at the fire station to reduce response time if appropriate and determined by the DPW.
- (d) Classroom/library is required for NFPA regulations, IFSTA Training Materials, Army Regulations, etc. Fire units conduct regular training for fire fighting and fire safety inspections.
- (e) Records holding area is required of training, inspections, and fire response activities.
- (f) Separate laundry facilities are recommended for fire fighters. It is unhealthy to wash fire-contaminated clothing with other clothing. Some laundry contractors use liquid fueled washing machines. Residual fumes in clothing are a hazard.
- (g) Hard wired smoke alarms are required in all sleeping areas. Smoke alarms will be tested monthly. Hardwired smoke detectors and evacuation horns that automatically transmit to the fire stations will be installed in all sleeping areas and other areas determined to be high hazard or mission critical. Pull stations should be located strategically near exits to allow for manual notification of the fire department and evacuation of the structure.
- (h) Storage of fuels and other flammables within the LSA is prohibited.
- (i) LSA will be arranged so fire lanes are left between groups of structures. The purpose of the lanes is to serve as firebreaks and fire lanes for fire fighting equipment. For additional fire protection, the SEAhuts will be constructed using 5/8" sheet rock for the interior walls.

- (j) Fire stations should be large enough to provide climate-controlled protection for all emergency response vehicles assigned.
- (k) Water Requirements: Camps will use potable water storage for fire fighting purpose. The 2,000 gal tanker as authorized above will be capable of tapping into the potable water storage. Centrally located standpipes for filling the tankers should be added to the potable water system to fill the tanker. The DPW in coordination with the Fire Department should determine appropriate location of standpipes.
- (l) DPWs should conduct regular fire risk assessments at each Base Camp to appraise the Base Commander of potential risks.

k. Morale, Welfare and Recreation (MWR):

(1) Fitness facilities: Each main operations base is authorized a fitness facility at 3 square feet per soldier. The facility will be housed in a container or SEAhut type structure and will have rubber floor tiles, electric heating, air conditioning, electric overhead fluorescent lighting, and fixed electrical connections.

(2) Field House: All main base camps are authorized a facility to house indoor sports, shows, large meetings, etc. Facility will have a wooden floor lined for basketball, volleyball, and other sports activities. If possible, the field house should be able to have an enclosed full size Basketball court of 50'X 94'.

(3) Athletic Fields: Each main base camp is authorized 2 sand volley ball courts, 2 horseshoe pits, a paved outdoor basket ball (1/2 court) court and one outdoor pavilion. Base camps over 2000 are authorized a second set.

(a) Where adequate space exists, multi-purpose athletic field suitable for flag football, softball, soccer and track activities may be constructed.

(b) Running trail with workout stations: Each main base camp is authorized an outdoor running trail, up to two miles, with lights, and up to eight fitness stations. Fitness stations are to be uncovered.

(4) Community Activity Center: Each main base camp is authorized a Community Activity Center. The facility will be one 60 x 80 structure per 2000 soldiers and be equipped with electric lighting, ECU, and fixed electrical connections. Facilities should have latrines and running water. The community activity center and theater will be located in opposite areas of camp for force protection issues.

(a) The structure will house the communication (cyber cafe) center, phone center, common area, library, and TV room.

- (b) The cyber café is authorized 4 computers with Internet access per 500 soldiers with semi private carrels and 4 morale (DSN) telephones with semi private carrels.
- (c) Common area: Area for game tables and machines.
- (d) Library: A “quiet” room with shelving, study desks and chairs.
- (e) Equipment room: A securable equipment issue room with storage shelves and bins.
- (f) TV Room: Large screen TV with AFN access and seating.
- (g) Movie Room: Large screen TV with VCR showing AAFES “first run” videos with seating.

(5) *Theater*. Each main base camp with over 1000 population is authorized one multi-purpose theater, with a 35' wide x 25' deep stage, with steps on both sides and a securable storage area under the stage, 2 dressing rooms on both sides, with climate control, mirrors and shelves to the sides. Main base camps under 1000 personnel are not authorized a stage. Facility will be hard wired with two each 380 volt, 32 amp and 64 amp, 220V power. The theater will be housed in a structure designed to seat 25% of the base population, or 500 persons, maximum. The theater, community activity center and field house should all have double entry/exit doors. Seating will be folding metal or plastic chairs, that can be quickly removed and the floor space used for formations or TOA movements.

(6) *Warehouse/maintenance facility*. Each task force is authorized one MWR warehouse/maintenance facility at 1 square foot per soldier. Facility is to be used for repair of MWR equipment and for short-term storage of remote site equipment and seasonal equipment not in use. It is not authorized for long-term storage of excess MWR equipment.

I. Armed Forces Network (AFN) Service: Each main base camp will establish facilities for broadcast transmission of AFN services. The standard AFN broadcasting pad is a minimum of 300' by 150' and located on the highest point of the perimeter or in the center of the base camp. It includes a housed power generation / fuel source. Variations for manned/unmanned operations areas follows:

(1) *Manned Operations*. The AFN pad will include a facility to house a manned affiliate operation – consisting of studios, offices and other administrative space up to a maximum of 56' x 75' or 4,200 square feet.

(2) *Unmanned Operations*. One climate-controlled equipment shelter the size of a standard SEAhut (512SF) is required.

6. FORWARD OPERATING BASES. Forward operating bases are defined as those sites normally occupied by company sized units and operated on a continuous basis. The standards outlined in this section apply to all forward operations bases and are broken down into four areas: housing standards, unit facility standards, soldier support standards and utilities standards.

a. Housing: The housing standards authorized is the same as for main base camps.

b. Unit Facilities: The unit facilities authorized for forward operations bases are similar but on a smaller scale than those authorized for a main base camps. Facilities will have electric heat, improved electric lighting, improved electrical connections, and a safer working environment.

(1) *Motor Pool Facilities:*

(a) Maintenance Facilities: A maintenance facility of 1200 square feet erected on concrete or asphalt pads is authorized for each company-sized element. The maintenance facility will be equipped to provide heating, electric lights, and compressed air.

(b) Maintenance Administration: A maximum of 320 square feet of office space is authorized for each company-sized element.

(c) At a minimum the office space will be contained in a SEAhut or modular container-type enclosure that is equipped with heating, electric lighting and fixed electrical connections.

(d) Wash Rack: Not authorized for forward operations bases.

(e) Hazardous Waste Collection Points: A hazardous waste collection point is authorized for forward operating bases.

(2) *Company facilities:* 1024 square feet (2 SEAhut bays) of office space for the administrative office, orderly rooms, and supply room. The company facility should increase by 100 square feet in spacing for an additional computer and communications line for troops to utilize. The office space will be contained in SEAhut or modular type containers equipped with electric heating, electric lighting and fixed electrical outlets.

(3) *Aviation Facilities:* Helicopter landing and parking pads will be concrete. One pad will be outfitted with lighting to support nighttime landing operations if applicable.

(4) *Aid Stations:* If part of a forward operations base, aid stations are authorized a maximum of 512 square feet of space. At a minimum the aid station will be contained in a SEAhut or a modular container-type enclosure equipped with electric heating, electric lighting and fixed electrical outlets.

c. Utilities:

(1) Water: Bottled water for drinking and stored potable water for facility usage will be the primary water source for forward operations bases.

(2) Electric Power: Generator power will continue to be the primary source of remote site power.

(3) Roads: Forward operations bases are authorized to place gravel on primary and secondary roads.

(4) Fuel Storage: Fuel bladders surrounded by earthen berms to contain any spillage are authorized for the storage of bulk fuels at forward operations bases.

(5) Sewage collection tanks are authorized. Sewage will be trucked to a suitable waste water treatment plant.

d. Soldier Support: Soldier support facilities at forward operations bases are limited due to the mission, number of troops at sites and location. The following are not authorized at forward operations bases: education center, post office, barber shops, chapel, finance center, PX, food concessions and laundry point. A mobile PX truck is authorized.

(1) Dining Facilities: Dining facilities will provide 640 square feet of dining room space and 320 total square feet of kitchen, admin, and storage space per 75 soldiers and will, at a minimum, be housed in a modular container-type structure. Adequate space for cleaning, latrine, and clothes changing for local national kitchen staff will be provided. The facility will have electric lighting, electric heating, air conditioning and fixed connections for all electrical equipment. Loading dock can be concrete, asphalt, or treated lumber.

(2) Morale, Welfare and Recreation (MWR): Remote sites are authorized limited MWR facilities based on the standard listed in main operations bases.

(a) Forward operations bases are not authorized athletic fields or separate communication centers.

(b) A fitness center is authorized at a rate of 512 square feet per 150 soldiers, with a minimum size of 512 square feet. At a minimum, the facility will be housed in a SEAhut or container type structure and be equipped with heating, lighting, and fixed electrical connections.

(3) Community Activity Center: Each Forward Operations Base is authorized a Community Activity Center at a rate of 512 square feet per 150 soldiers, with a minimum size of 512 square feet. At a minimum, the facility will be housed in a SEAhut or container type structure and be equipped with heating, lighting, and fixed electrical

connections. Additionally, community activity centers are authorized a 27" television w/ VCR, access to AFN TV, and one set per week of AAFES "first run" videos.

(4) Fire Protection: Tri-Max portable foam fire suppression systems will be used for forward operations bases where no fire department is located, however soldiers at these locations will be properly trained on the use of these devices, appropriate number needs to be determined by BCCA and AOR Fire Chief.

(5) Fuel Point: Fuel points will be fuel trucks with a concrete slab.

7. OUTPOSTS. Outposts are normally used for short term, operationally defined missions (examples checkpoints and observation posts), platoon or squad sized, and will not have the level of services the main base camps and forward operations bases are authorized. Outposts will be authorized the following primary services.

a. Portable latrines, or ablution units if they can be serviced. Ablution units are preferred over small unit showers (SUS) if the site will be occupied over the winter.

b. Portable generators to provide power for electric lighting.

c. Heated Tier II tents (16' x 32') for living and working space, or Corimec style containers (8' x 20'). If containers are used, one container for admin space is authorized. Living space is the same as base camps.

d. One (1) Tier II tent to serve as a recreation room and break room. A 27" television with a VCR is authorized for the break room. Gutting and connecting Corimec style containers is not authorized for this purpose

e. Soldier support will be relayed by higher headquarters. No temporary facilities are authorized.

f. Perimeter fence will be concertina wire.

g. Preferred blast protection is Texas Barriers (interlocking concrete wall 10' high, 15" thick, or berms.

h. Gravel parking and walking areas are authorized.

8. OPERATIONS & MAINTENANCE (O&M). The purpose of this portion of the Red Book is to provide guidance for the amount of maintenance required on facilities constructed for contingency operations. The goal is to maximize the life expectancy of temporary facilities with minimum cost to the government. Contracts given to contractors should follow these guidelines.

a. *Painting:* Buildings shall be painted to prevent weather damage to the buildings. Painting for appearance sake is not authorized. Paint will have a durability rating of at least five years.

(1) A building shall be painted whenever a building is repaired and the paint surface damaged or removed, or whenever the cost of painting can be justified through prevention of weather damage.

(2) Treated lumber is the standard for wooden walkways, decks and wherever wood comes in contact with the soil. If treated lumber is not available, all bare wood will have a primer and then two coats of paint to include the underside of decks, deck stringers, and pilings. All decks will be sand painted or some other method to prevent slipping.

(3) Painting warning signs, trips hazards, and other standard safety procedures is authorized.

(4) Painting of interior walls is authorized every 3rd rotation, (18 Months).

b. *Signs:* Signs will generic in nature. The intent is to have signs that will function through several rotations. Signs can be either metal or wood.

(1) One foot square division patch signs can be added to generic signs by use of hooks. This is so that when divisions change, the generic sign will remain, and the only cost involved will be changing division patches.

(2) Commander and senior NCO names can be attached to generic signs.

(3) Standard European traffic signs will be used.

(4) Use of contractors for battalion crests and other distinctive unit signs is not authorized.

c. *Road Repair/Dust Abatement:* The intent is to maintain maximum maneuverability for the commander, minimize damage to government equipment, and provide a safe transportation system for the soldiers.

(1) The DPW will decide the frequency of grading based on the local conditions. Generally grading is done often enough to minimize potholes and wash- boarding.

(2) The DPW will decide the frequency of dust abatement based on the local conditions. Generally dust abatement is done often enough to prevent dust damage to engines and electronic components. Health of soldiers should also be considered.

(3) Dust abatement and grading costs should be closely monitored. Paving should be considered on gravel roads if the payback period is 2 years or less.

(4) The DPW will decide the frequency of mud removal from paved roads. Safety should be the prime consideration.

(5) Use of lumber for parking lot stripes on gravel parking lots is not authorized.

d. *Erosion Control*: Erosion control measures are authorized to minimize damage to government facilities, or in vector control. Landscaping for appearance sake is not authorized.

(1) Ditches: Ditches with over a 3% slope, or when serious erosion is observed, should have geotextile and rip-rap installed. Culverts should have headwalls with a 5 year design life. Sandbags, if used, should be filled with concrete, (preferred), or protected from sunlight if filled with sand.

(2) Grass: Planting grass is authorized for erosion control. Grass should be local species or other varieties known to do well in the local area with minimum maintenance. A mixture of seed to include at least 30% grass species that grow through the winter should be used. Fertilization and other soil amendments to encourage adequate erosion protection are authorized. Grass cutting should be done under the guidance of the environmental officer based on the local conditions. Grass cutting for appearance sake is not authorized with the exception of the following:

(a) Within 15 meters of buildings, the maximum height will be 20 cm and a minimum of 10 cm. Mowing will not be more often than once every two weeks.

(b) MWR fields: Authorized MWR fields can be planted, fertilized, watered, and cut for the needs of the sport they are designed for. Chalk markings are authorized.

(c) The commander may designate certain high visibility areas where uncut grass may reflect negatively on the command. These areas will be individually specified in a grass-cutting contract.

(3) Leaf Raking: Leaf raking by contractor is authorized three times annually, between October and January.

(4) Vector control: Filling in and grass planting of minor depressions, wheel ruts, and construction damage is authorized to prevent mosquitoes and insect borne

diseases. The environmental officer must assess any area of standing water greater than 1/10 acre (4356 square feet) for environmental impact.

(5) Storm damage: Use of contractors for storm damage to trees is authorized. Intent is to minimize effects of tree damage to utilities and transportation. Remaining damaged and leaning trees should be assessed for safety.

e. *Pavement Repair*: All contractor asphalt new work should come with a two-year guarantee. Repairs to existing paved roads should be as follows.

(1) Asphalt: Potholes and utility cuts should be repaired as soon as possible to prevent accidents, vehicle damage, and further road damage. Base should be prepared to prevent slumping.

(2) Stone: Repair of existing paving stones for safety and equipment concerns is authorized. Repairs for appearance sake are not authorized.

(3) Concrete: Repairs to concrete roads, bridges, and airfields will be coordinated and approved by the task force engineer on an individual basis.

(4) Guardrails: Guardrails to keep vehicles off areas are authorized. Only treated lumber, concrete, or metal will be used. If no guardrail previously existed it must be treated as new work.

f. *New Work*: Construction of new roads, sidewalks, buildings, or other facilities where none previously existed is new work and cannot be accomplished under O&M. Major modifications to existing structures such as porches, closing in porches, decks, new walls, additional latrines, additional electrical service, moving doors and windows, counter tops, shelves, and bulletin boards are all considered to be new work.

g. *Preventive Maintenance*: Use of contractors for preventative maintenance inspection of facilities is authorized. Inspection should be conducted every 60 days, but can be modified by the commander for more or less frequent inspections on an individual basis. The purpose of these inspections is for safety and to save the government money by identifying deficiencies while they are still small and easy to fix. Contract can be just for an inspection or for inspect and fix. Inspection should include but is not limited to the following:

(1) Electrical: Check for damage or tampering with switches, outlets, junction boxes, control panels, circuit breakers, fuses, grounding rods, and overloading.

(2) Plumbing: Check for leaks, drips, corrosion in shower heads, shower curtains, water pressure (40 psi), hot water temperature, and evidence of water damage to floors and walls.

(3) Exterior: Check roof for leaks, deterioration, lost shingles, bubbles, and animal damage. Check walls for holes and chipping paint. Check windows for broken glass and ease of operation. Check doors for squeaks, ease of movement, and working locks.

(4) Interior: Check linoleum for cracks and tears. Check doors for squeaks, ease of movement, and working locks. Check walls for cracks, holes, and chipping paint. Check ceiling for evidence of leaks.

9. SUMMARY: This handbook is designed to ensure adequate facilities for soldiers and civilians deployed in contingency operations under USAREUR command. Authorized levels of support are derived from Army Regulations and from five years of lessons learned in the field. This handbook goal is to take the intent of installation-type Army Regulations and apply them to contingency operations. While all construction in contingency operations is temporary in nature, guidelines have been added to ensure an extended effective lifespan of temporary facilities when needed. All suggested changes and additions to authorized facilities should be made to DCSENG, USAREUR.

GLOSSARY

AAFES	Army & Airforce Exchange Service
AEI	Architectural and Engineering Instructions
AFN	Armed Forces Network
AHA	Ammunition Holding Area
ALOC	Administration & Logistics Operations Center
AO	Area of Operations
AOR	Area of Responsibility
ASP	Ammunition Supply Point
BCCA	Base Camp Coordinating Agency
BCMP	Base Camp Master Plan(s)
BCPB	Base Camp Planning Board
BUB	Battle Update Brief
C/S	Chief of Staff
COA	Course of Action
DCSENGR	Deputy Chief of Staff Engineer
DCSLOG	Deputy Chief of Staff Logistics
DCSOPS	Deputy Chief of Staff Operations
DCSPER	Deputy Chief of Staff Personnel
DOC	Division Operations Center
DPW	Directorate of Public Works
FARP	Forward Area Refuel Point
FOD	Foreign Object Damage
FoF	Follow on Force
FOS	Forward Operating Sites
ICW	In Coordination With
ISB	Intermediate Staging Base
JAB	Joint Acquisition Board
JARB	Joint Acquisition Review Board
JCC	Joint Contracting Center
LSA	Life Support Area
M&R	Maintenance and Repair
MOS	Military Occupation Skill
MPI	Master Planning Instructions
MWR	Morale, Welfare and Recreation
NSE	National Support Element
OJG	Operation Joint Guard
OPORD	Operations Order
PMO	Program Management Office
PSI	Pounds per Square Inch
QASAS	Quality Assurance Specialist (Ammunition Surveillance)
SCIF	Secure Compartmentalized Information Facility
SF	Square Footage
SFOR	Stabilization Force
SOP	Standard Operating Procedure
SSA	Supply Support Activity
STC	Senior Tactical Commander
TDA	Table of Distribution and Allowances
TF	Task Force
TOC	Tactical Operations Center
USACE	United States Army Corps of Engineers
VCR	Video Cassette Recorder